

Source Water Assessment Program (SWAP) Report

For

Village School/Raymond School



Prepared by the
Massachusetts Department of
Environmental Protection,
Bureau of Resource Protection,
Drinking Water Program

Date Prepared:
April 13, 2002

Table 1: Public Water System (PWS) Information

| | |
|----------------------|-----------------------------------|
| <i>PWS NAME</i> | VILLAGE SCHOOL/ RAYMOND SCHOOL |
| <i>PWS Address</i> | ON THE COMMON |
| <i>City/Town</i> | ROYALSTON |
| <i>PWS ID Number</i> | 2255001 |
| <i>Local Contact</i> | Reise Richardson, School Director |
| <i>Phone Number</i> | (978) 249-3505 |

| <i>Well Name</i> | <i>Source ID#</i> | <i>Zone I (in feet)</i> | <i>IWPA (in feet)</i> | <i>Source Susceptibility</i> |
|------------------|-------------------|-----------------------------|---------------------------|----------------------------------|
| Well #1 | 2255001-01G | 100 | 420 | High |

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

- ? inventory land uses within the recharge areas of all public water supply sources;
- ? assess the susceptibility of drinking water sources to contamination from these land uses; and
- ? publicize the results to provide support for improved protection.

Maintaining Your Good Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential contaminant sources, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:

This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential contaminant sources, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:

1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attachments, including a Map of the Protection Areas

1. Description of the Water System

The well for the facility is located about 30 feet to the right of the building as you face the front of the building. The well is a deep rock well, and has a Zone I of 100 feet and an Interim Wellhead Protection Area (IWPA) of 420 feet. The IWPA provides an interim protection area for a water supply well when the actual recharge area has not been delineated. The actual recharge area to the well may be significantly larger or smaller than the IWPA. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration. Please refer to the attached map of the Zone I and IWPA. The well serving the facility has no treatment at this time. Please refer to the attached map of the Zone I and IWPA.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to landuses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

For current information on monitoring results and treatment, please contact the Public Water System contact person listed above.

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate activities in Zone I; and**
2. **Aboveground Storage Tank (AST) with fuel oil.**

The overall ranking of susceptibility to contamination for the well is Moderate, based on the presence of only moderate threat land use or activities in the IWPA.

1. **Zone I** - Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone I. The school's Zone I contains a portion of the school building, a portion of the school's driveway, the playground and some parking spaces. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

Recommendations:

- ✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.
- ✓ Do not use road salt within the Zone I.
- ✓ If the school intends to continue utilizing the structures, athletic fields, and parking areas in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

2. **Aboveground Storage Tank** – A 250 gallon AST with fuel oil is located in the building on cement floor, without secondary containment. If managed improperly, Aboveground Storage Tanks can be a potential source of contamination due to leaks or spills of the chemicals they store.

Recommendations:

- ✓ The Department recommends that you provide 110% secondary containment for the AST located in the school building. Aboveground storage tanks in your IWPA should be located on an impermeable surface.

Table 2: Table of Activities within the Water Supply Protection Areas

| Facility Type | Potential Contaminant Sources | Zone I | IWPA | Threat | Comments |
|---------------|-------------------------------|--------|------|----------|--|
| School | Parking lot & driveways | Yes | Yes | Moderate | Limit road salt usage and provide drainage away from wells |
| | Aboveground Storage Tank | Yes | Yes | Moderate | AST on cement floor in building |
| | Structure | Yes | Yes | Moderate | Non-water supply structures in Zone I |

* -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone I. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

- ✓ Comply with all provisions of the regulations regarding AST. Any modifications to the AST must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements. The Department recommends that you consult with the local fire department for any additional local code requirements regarding AST.

Implementing the following recommendations will reduce the system's susceptibility to contamination.

3. Protection Recommendations

Village /Raymond School should review and adopt the following recommendations at the school:

Zone I:

- ✓ Keep non-water supply activities out of the Zone I.
- ✓ Consider well relocation if Zone I threats cannot be mitigated. Please note that DEP Permit Approvals must be obtained prior to the installation of a new well.

Training and Education:

- ✓ Instruct staff on emergency response, and best management practices; include custodial staff, groundskeepers and certified operator.
- ✓ Post drinking water protection area signs at key visibility locations.
- ✓ Incorporate groundwater education into school curriculum.

Planning:

- ✓ Work with local officials in Royalston to include the school's IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

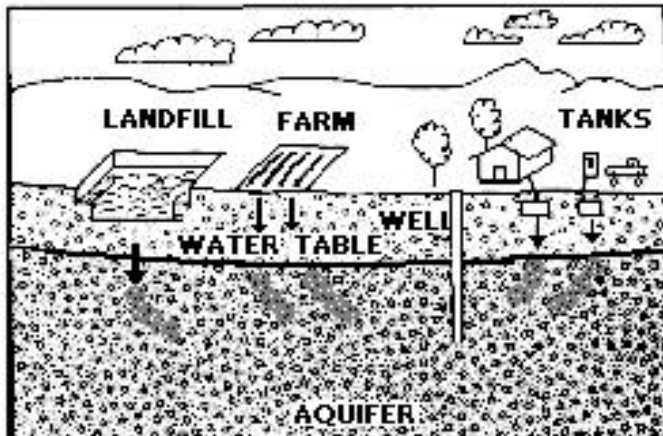


Figure 1: Example of how a well could become contaminated by different land uses and activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

4. Attachments

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet

For More Information:

Contact **Josephine Yemoh-Ndi** in DEP's **Worcester Office** at **(508) 792-7650 x 4030** for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at:
www.state.ma.us/dep/brp/dws.

Copies of this assessment have been provided to the water department and town boards.

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix